Coyote Creek Watershed
Santa Clara Valley Water District
Open Space Restoration Flood Protection

MEMORANDUM

TO: Steve Wrightson

FROM: Steve Bui

SUBJECT: Coyote Creek at Rockspring (Project No. 402101)
Project Approach

DATE: August 15, 2002

Introduction

This memorandum presents findings and project approach recommendations following a review of the United States Army Corps of Engineers' (Corps) draft Economic Damages Report, preliminary project cost estimates (Attachment 1), and preliminary benefit-to-cost (B/C) ratio (Attachment 2) for the Coyote Creek at Rockspring flood protection project.

Background

The Coyote Creek at Rockspring flood protection project is located in the City of San Jose, in Santa Clara County, California. The purpose of the project is to plan, design, and construct facilities to provide flood protection for the Rockspring neighborhood. The area was first identified for flood protection in a 1973 Santa Clara Valley Water District (District) General Plan, but was not constructed due to higher priorities in the watershed. In January 1997, the neighborhood suffered severe damages to approximately 25 apartment buildings and 52 new town homes when Coyote Creek flooded. The flood event was estimated to be a 15-year event.

After the Rockspring neighborhood was flooded in 1997, the District requested that the Corps investigate a solution to the problem under their Section 205 authority. Work under this authority provides for local protection from flooding by the construction or improvement of flood control structures such as levees, channels, and dams. Section 205 is part of the Corps' Continuing Authority Program, which is intended for small flood protection projects and does not require specific congressional authorization. It also limits the Federal share to $7 million for each project. Federal money can pay for all project components except for the purchase of lands, easements and rights-of-way, and soil disposal costs. In January 2000, the District and the Corps signed a Feasibility Study Cost Sharing Agreement (Agreement) initiating the project under the Section 205 authority.

The Agreement includes a Project Study Plan, which presents the specific responsibilities, guidelines, tasks, cost estimates and schedule for the feasibility phase. The purpose of this phase is to fully define problems and opportunities, describe and evaluate alternative plans, and fully describe a recommended project, while complying with NEPA. The feasibility phase is cost shared equally between the Corps and the District, and the District may provide up to one-half of their share (one quarter of the total study cost) with in-kind services instead of cash.

The study schedule, cost estimate, and cost allocation, as agreed to by the Corps and the District, specified a final report to be delivered by March 2002 at a total cost of $1.16 million. Half of the study cost ($580,000) would be funded by the District with cash (no in-kind services specified).

Status of Feasibility Study

Phase 1 of the Feasibility Study included:

1) Reviewing the extent of the flood problem;
2) Defining the existing and most probable future flood conditions; and
3) Providing economic impacts of flooding to the Rockspring area assuming a project is not implemented.

This process established the “without project” conditions. Phase 1 began with a public workshop that was held in February 2000 to solicit public input. However, there was no community participation because the meeting was not adequately noticed or advertised.

Phase 1 work activities include gathering information on the physical, environmental, and geotechnical characteristics of the study area. Rockspring investigations and studies that have been completed or are in draft form include surveys and mapping, geotechnical investigation and analysis, hydrology and hydraulic analysis, and economic study and analysis. Investigations and studies that are incomplete include cultural resources investigation, and hazardous, toxic, and radioactive waste (HTRW) testing. The studies were scheduled to be completed by June 2000. However, failure to secure rights-of-entry from the City of San Jose delayed the project by more than a year.

Key results from completed studies include the flood damage estimates for the “without project” conditions and flood damage reduction benefits for varying levels of protection. Preliminary results indicate that the following flood damage reduction benefits can be achieved for the specified level of protection:

Level of Flood Protection	100-year	50-year	25-year
Damage Reduction Benefits	$3.5 million	$2.8 million	$1.0 million

These estimates are critical because the benefits of the project must exceed the costs of the project (or a B/C ratio greater than 1). If the B/C ratio does not exceed one, the project does not pass the Corps’ pass or fail test to designate it as a project with federal interest. Lacking this, there can be no federal participation in the project (unless special federal consideration is given). Typically, the costs of the project for calculation of the B/C ratio would not be estimated until the next phase of the project, Phase 2 Plan Selection. However, the damage reduction benefits were significantly lower than expected, so the District requested that the Corps develop preliminary project cost estimates early. A summary of the estimates, as prepared by the Corps, are shown in Table 1.

Table 1: Corps' Preliminary Cost Estimate

Level of Flood Protection	100-year	50-year	25-year
Damage Reduction Benefits	$3.5 M	$2.8 M	$1.0 M
Construction Costs	$4.0 M	$3.5 M	$3.2 M
Design/Inspection	$1.0 M	$1.0 M	$1.0 M
Lands, Easements, ROW	$0.6 M	$0.6 M	$0.5 M
Mitigation	$0.6 M	$0.6 M	$0.5 M
Total	**$6.2 M**	**$5.7 M**	**$5.2 M**
B/C Ratio	**0.56**	**0.49**	**0.19**

None of the three projects (different levels of protection), as estimated by the Corps, satisfy the federal B/C criteria. The Corps expressed in their letter dated February 25, 2002 (Letter) (Attachment A) to the District that the B/C ratio is not expected to improve enough with further refinement. District staff reviewed the Corps' preliminary project cost estimate and prepared a revised project cost estimate for an alternative project in an attempt to resolve the B/C disparity.

District Review of Preliminary Cost Estimate

District staff reviewed the Corps' preliminary project cost estimate. For the 100-year flood protection project, the Corps' construction cost estimate was $4 million. The District's staff estimate, for the same project, was $3.3 million. District staff also reviewed the design and inspection costs and believes the Corps' estimate at 25% of the construction costs are too high for a project of this type and size. District staff assumed 10% to 20% for design and construction management costs. Additionally, it may be possible to reduce the real estate costs, which were based on highest and best value assumptions. For example, it may be possible to argue that the narrow strip of land needed for the flood control structure is within the riparian setback required by the City of San Jose, so there should be no commercial value to the property and it could be valued at zero dollars. However, for planning purposes, real estate costs have been based on purchasing ten feet of right-of-way along the property owned by the San Jose Water Company. Lastly, District staff estimated mitigation costs at $200,000 per acre of revegetation. For a project of this type, size, and location, mitigation costs would not be expected to exceed a total of $200,000. These three additional issues could reduce the total project cost estimate to $4.5 million. Therefore, even assuming the above issues could be resolved favorably, the project still would not meet the federal B/C requirements.

Table 2: Comparison of Corps' and District's Cost Calculation

	Corps	District
Level of Flood Protection	100-year	100-year
Damage Reduction Benefits	$3.5 M	$3.5 M
Construction Costs	$4.0 M	$3.3 M
Design/Inspections	$1.0 M	$0.6 M
Lands, Easements, ROW	$0.6 M	$0.4 M
Mitigation	$0.6 M	$0.2 M
Total	**$6.2 M**	**$4.5 M**
B/C Ratio	**0.56**	**0.78**

Floodwall Project Alternative

District staff prepared a preliminary project cost estimate for an alternative project design for purposes of comparison. Staff assumed a concrete floodwall project similar to the Southbay Mobile Home Park floodwall that was constructed last year. A preliminary project cost estimate is shown in Table 3.

Table 3: Floodwall Cost Estimate

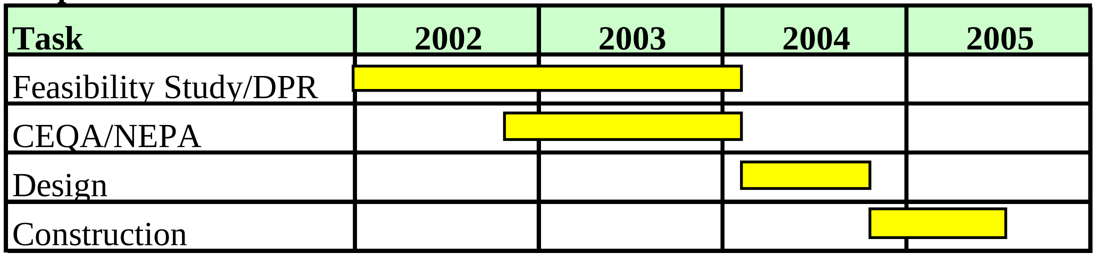
Level of Flood Protection	100-year
Damage Reduction Benefits	$3.5 M
Construction Costs	$3.5 M
Design/Inspections	$0.3 M
CEQA/Permits	$0.3 M
Lands, Easements, ROW	$0.4 M
Mitigation	$0.1 M
Total	**$4.6 M**
B/C Ratio	**0.76**

Construction costs were based on a wall height similar to the Corps' sheetpile wall design. The project length was assumed to be approximately 3,000 feet. The cost estimate for the reinforced concrete floodwall was based on the Southbay Mobile Home Park floodwall design and the actual awarded unit prices of that construction contract. Mitigation costs were based on a five-foot wide disturbance area for the 1,600 feet of wall adjacent to the creek. Real estate costs were based on purchasing a ten-foot wide right-of-way along the property owned by the San Jose Water Company (District owns all other necessary right-of-way). This alternative project would still not satisfy the Corps' B/C ratio requirements. The project is slightly more costly than the Corps' alternative, but is aesthetically more palatable than a sheetpile wall.

Corps' Project Schedule

The Agreement originally scheduled a "without project" conditions conference for June or July 2000. The Corps' project manager rescheduled the conference for February 2002, which was nineteen months later than originally planned. However, this conference was never held because the Corps had determined that the project's B/C ratio was less than 1.0, and they did not expect it to improve enough with further refinement. The Corps implied from their Letter that this project will probably not be of federal interest. However, if we look at the schedule as if the Corps held the conference in February 2002, the final Detailed Project Report (DPR) with project recommendation originally scheduled for July 2002 would not be received until February 2004. According to the Corps' schedule, it would take another seven months to complete final plans and specifications (September 2004). Construction would be completed by Fall 2005, at the earliest.

Corps' Current Schedule

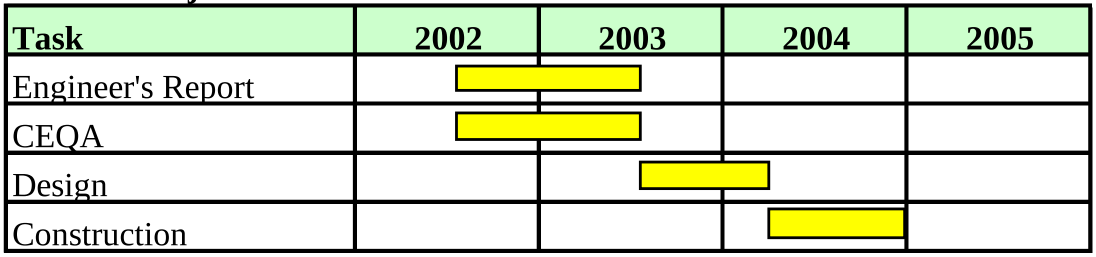


Task	2002	2003	2004	2005
Feasibility Study/DPR	🟨	🟨	🟨	
CEQA/NEPA	🟨	🟨	🟨	
Design			🟨	
Construction			🟨	🟨

District's Project Schedule

With the District moving forward to terminate the Agreement with the Corps and proceeding with the Rockspring project independently, the District could begin project planning and environmental review immediately. Assuming environmental documentation will take up to a year (Mitigated Negative Declaration only; EIS no longer needed), construction could commence and be completed in 2004, as shown in the schedule below.

District's Project Schedule



Task	2002	2003	2004	2005
Engineer's Report	🟨	🟨		
CEQA	🟨	🟨		
Design		🟨	🟨	
Construction			🟨	

This approach achieves construction about a year faster than the Corps' Section 205 approach.

Cost Considerations

As noted above, the economic benefits defined by the Corps' economic assessment were valued at $3.5 million. Under the Corps' Section 205 provisions, the Corps shares 65% of the design, construction, and mitigation costs, and the District shares 35% of them. The feasibility study cost, including the cost of the EIR/EIS, is to be shared 50/50.

Had it been possible to achieve a B/C ratio of 1.0 with the benefits of $3.5 million, the Corps' contribution to the design, construction, and mitigation would have been about $2.1 million. Since LERRDs costs, which are the local sponsor's responsibility, can be credited toward the local share of the design/construction/mitigation costs, the actual contribution by the Corps' may have been somewhat greater than $2.1 million. Additionally, some cost share benefit may have been achieved from the sharing of the feasibility and EIR/EIS costs. However, much of that benefit may have been lost as a result of delays with the Corps' schedule and the Corps' protracted implementation processes.

Although the anticipated financial benefit of partnering with the Corps' is not insignificant, the project does not meet the Corps' B/C criteria, so the prospective cost contribution becomes moot.

Alternative Implementation Approaches

Based on the fact that there will most likely be no Federal interest in continuing with the study, the following alternatives should be considered:

1. District proceeds on its own (without the Corps) to implement a permanent 100-year flood protection project:
   PROS: Opportunity to partner with City of San Jose.
   Opportunity to accelerate the project schedule.
   Opportunity to demonstrate District commitment to Rockspring neighborhood.
   CON: Does not meet the District's Priority Criteria.

2. Obtain specific congressional authorization to implement the project.
   PROS: Maintains federal funding support.
   Eliminates feasibility study phase, therefore saves time and money.
   CONS: Requires political capital.
   May require considerable time to obtain such authorization, if attainable at all.

3. District proceeds on its own for interim (e.g. sandbag/shotcrete) solution.
   PRO: Permanent solution developed after Coyote Watershed Study complete.
   CON: May not be politically palatable to implement an unattractive or substandard solution in this depressed neighborhood.

4. Drop the project until such time as funding for improvements to Coyote Creek upstream of I-280 is available.

Conclusions & Recommendations

It is recommended that the District continue with the project without Corps' participation and try to partner with the City of San Jose. Based on the Corps' Letter, it is unlikely that they can resolve the B/C disparity. The recommendation in the DPR is likely to be no federal participation in the Rockspring Project. This report and recommendation would not be complete until February 2004. Money would be wasted if the Corps continues working on the DPR because the B/C ratio would most likely not improve enough for federal interest. The District has already reported to the public and other agencies a project completion date of 2004. This would not be achieved if the District continues to work with the Corps.

Attachments:
A – Letter from the Corps dated February 25, 2002
1 – Corps' Preliminary Project Cost Estimates
2 – Corps' Preliminary Benefit-to-Cost Ratio

cc: Lyndel Melton